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CENTRAL FAX CENTER**Appln. Serial No. 09/982,481
Amendment Under 37 C.F.R. § 1.116

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CURRENT LISTING OF THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1 1. – 43. (Cancelled)

1 44. (Previously Presented) A method executed by a computer to form a pixel bar chart for
2 display on a display monitor, comprising:
3 obtaining a set of records, each record comprising a plurality of attributes;
4 assigning a pixel to each of said records to provide record-assigned pixels, wherein every
5 such record-assigned pixel in the chart is assigned to a different record; and
6 constructing the pixel bar chart by:
7 partitioning the record-assigned pixels into groups along a first axis of the pixel
8 bar chart according to a first dividing attribute;
9 partitioning the record-assigned pixels in the groups into sub-groups along a
10 second axis of the pixel bar chart according to a second dividing attribute;
11 after partitioning into the sub-groups, sorting, in each of the sub-groups, the
12 record-assigned pixels according to a first ordering attribute along the first axis of the pixel bar
13 chart, and according to a second ordering attribute along the second axis of the pixel bar chart,
14 wherein each record-assigned pixel is adjacent at least one other record-assigned pixel.

1 45. (Previously Presented) The method of claim 44 further comprising, for each
2 record-assigned pixel, assigning a selectable visual indicator to the record-assigned pixel based
3 on an attribute value of each record so that some pixels have a different visual indicator than
4 other pixels.

1 46. (Previously Presented) The method of claim 45 wherein the visual indicator comprises
2 color.

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1 47. (Previously Presented) The method of claim 44 wherein said records are obtained from a
2 multidimensional data set, and said method further comprises assigning a selectable visual
3 indicator to each record-assigned pixel based on an attribute of each record so that some pixels
4 have a different visual indicator than other pixels.

1 48. (Previously Presented) The method of claim 44 wherein the pixel bar chart comprises a
2 plurality of columns corresponding to the groups, each column comprising a plurality of pixels
3 and having a width measured in terms of pixels, and the method further comprises causing the
4 width of at least one column to be different than the width of at least one other column.

1 49. (Cancelled)

1 50. (Previously Presented) A computer-readable storage medium having computer-readable
2 program code embodied therein that is adapted to be executed by a computer to implement a
3 method to form a pixel bar chart for display on a display monitor, the method comprising:

4 obtaining a set of records, each record comprising a plurality of attributes;

5 assigning a pixel to each of said records to provide record-assigned pixels, wherein every
6 such record-assigned pixel in the chart is assigned a different record; and

7 constructing the pixel bar chart by:

8 partitioning the record-assigned pixels into groups along a first axis of the pixel
9 bar chart according to a first dividing attribute;

10 partitioning the record-assigned pixels in the groups into sub-groups along a
11 second axis of the pixel bar chart according to a second dividing attribute;

12 after partitioning the record-assigned pixels into the sub-groups, sorting, in each
13 of the sub-groups, the record-assigned pixels according to a first ordering attribute along the first
14 axis, and sorting, within each sub-group, the record-assigned pixels according to a second
15 ordering attribute along a second axis, wherein each record-assigned pixel is adjacent at least one
16 other record-assigned pixel.

1 51. – 52. (Cancelled)

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1 53. (Previously Presented) The computer-readable storage medium of claim 50 wherein said
2 records are obtained from a multidimensional data set, and said method further comprises
3 assigning a selectable visual indicator to each record-assigned pixel based on an attribute of each
4 record so that some pixels have a different visual indicator than other pixels.

1 54. (Previously Presented) The computer-readable storage medium of claim 50 wherein the
2 pixel bar chart comprises a plurality of columns that correspond to the groups, each column
3 comprising a plurality of pixels and having a width measured in terms of pixels, and the method
4 further comprises causing the width of at least one column to be different than the width of at
5 least one other column.

1 55. (Cancelled)

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1 56. (Previously Presented) A computer system, comprising:
2 a bus;
3 a display device coupled to said bus;
4 a computer-readable memory coupled to said bus; and
5 a processor coupled to said bus, said processor executes a method for constructing a pixel
6 bar chart for display on the display device, said method comprising:
7 obtaining a set of records, each record comprising a plurality of attributes;
8 assigning a pixel to each of said records to provide record-assigned pixels,
9 wherein every such record-assigned pixel in the chart is assigned a different record; and
10 constructing the pixel bar chart by:
11 partitioning the record-assigned pixels into groups along a first axis of the
12 pixel bar chart according to a first dividing attribute;
13 partitioning the record-assigned pixels in the groups into sub-groups along
14 a second axis of the pixel bar chart according to a second dividing attribute;
15 after partitioning the record-assigned pixels into the sub-groups, sorting, in
16 each of the sub-groups, the record-assigned pixels according to a first ordering attribute along a
17 first axis, and sorting, within each sub-group, the record-assigned pixels according to a second
18 ordering attribute along a second axis, wherein each record-assigned pixel is adjacent at least one
19 other record-assigned pixel.

1 57. – 58. (Cancelled)

1 59. (Previously Presented) The computer system of claim 56 wherein said records are
2 obtained from a multidimensional data set, and said method further comprises assigning a
3 selectable visual indicator to each record-assigned pixel based on an attribute of each record so
4 that some pixels have a different visual indicator than other pixels.

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1 60. (Previously Presented) The computer system of claim 56 wherein the pixel bar chart
2 comprises a plurality of columns corresponding to the groups, each column comprising a
3 plurality of pixels and having a width measured in terms of pixels, and the method further
4 comprises causing the width of at least one column to be different than the width of at least one
5 other column.

1 61. - 62. (Cancelled)

1 63. (Previously Presented) The method of claim 44, wherein sorting the record-assigned
2 pixels in each sub-group according to the first and second ordering attributes comprises
3 performing a two-dimensional sort of the record-assigned pixels in each sub-group.

1 64. (Previously Presented) The method of claim 44, further comprising:
2 determining a first one-dimensional histogram for the first ordering attribute, and a
3 second one-dimensional histogram for the second ordering attribute,
4 wherein sorting the record-assigned pixels in each sub-group is based on the first and
5 second one-dimensional histograms.

1 65. (Previously Presented) The method of claim 44, wherein the first and second ordering
2 attributes are selected from the plurality of attributes, and the method further comprising:
3 selecting a visual indicator attribute from the plurality of attributes, wherein the visual
4 indicator attribute is different from both the first and second ordering attributes; and
5 applying colors to the record-assigned pixels according to the visual indicator attribute
6 such that at least some of the record-assigned pixels have different colors.

1 66. (Previously Presented) The method of claim 44, wherein partitioning into sub-groups
2 causes at least some of the sub-groups to have different widths measured in terms of pixels along
3 the first axis, and causes at least some of the sub-groups to have different heights measured in
4 terms of pixels along the second axis.

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1 67. (Previously Presented) The method of claim 44, wherein sorting the record-assigned
2 pixels in each sub-group according to the first ordering attribute along the first axis comprises
3 sorting the record-assigned pixels in each sub-group according to the first ordering attribute
4 along an x-axis, and

5 wherein sorting the record-assigned pixels in each sub-group according to the second
6 ordering attribute along the second axis comprises sorting the record-assigned pixels in each
7 sub-group according to the second ordering attribute along the y-axis.

1 68. (Previously Presented) The method of claim 44, wherein constructing the pixel bar chart
2 further comprises arranging the sub-groups in an array defined by the first and second axes.

1 69. (Previously Presented) The method of claim 68, wherein partitioning into the sub-groups
2 causes at least some of the sub-groups to have different widths measured in terms of pixels along
3 the first axis, and causes at least some of the sub-groups to have different heights measured in
4 terms of pixels along the second axis.

1 70. (Previously Presented) The computer-readable storage medium of claim 50, wherein
2 sorting the record-assigned pixels according to the first and second ordering attributes along the
3 respective first and second axes comprises performing a two-dimensional sort of the
4 record-assigned pixels according to the first and second ordering attributes.

1 71. (Previously Presented) The computer-readable storage medium of claim 50, wherein
2 sorting the record-assigned pixels in each sub-group according to the first ordering attribute
3 along the first axis comprises sorting the record-assigned pixels in each sub-group according to
4 the first ordering attribute along an x-axis, and

5 wherein sorting the record-assigned pixels in each sub-group according to the second
6 ordering attribute along the second axis comprises sorting the record-assigned pixels in each
7 sub-group according to the second ordering attribute along the y-axis.

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1 72. (Previously Presented) The computer-readable storage medium of claim 50, wherein the
2 first and second ordering attributes are selected from the plurality of attributes, and the method
3 further comprises:

4 selecting a visual indicator attribute from the plurality of attributes, wherein the visual
5 indicator attribute is different from both the first and second ordering attributes; and

6 applying colors to the record-assigned pixels according to the visual indicator attribute
7 such that at least some of the record-assigned pixels have different colors.

1 73. (Previously Presented) The computer-readable storage medium of claim 50, wherein
2 partitioning into the sub-groups causes at least some of the sub-groups to have different widths
3 measured in terms of pixels along the first axis, and causes at least some of the sub-groups to
4 have different heights measured in terms of pixels along the second axis.

1 74. (Previously Presented) The computer-readable storage medium of claim 50, wherein
2 constructing the pixel bar chart further comprises arranging the sub-groups in an array defined by
3 the first and second axes.

1 75. (Previously Presented) The computer-readable storage medium of claim 74, wherein
2 partitioning into the sub-groups causes at least some of the sub-groups to have different widths
3 measured in terms of pixels along the first axis, and causes at least some of the sub-groups to
4 have different heights measured in terms of pixels along the second axis.

1 76. (Previously Presented) The computer system of claim 56, wherein at least some of the
2 sub-groups have different widths measured in terms of pixels along the first axis, and at least
3 some of the sub-groups have different heights measured in terms of pixels along the second axis.

1 77. (Previously Presented) The computer system of claim 56, wherein sorting the
2 record-assigned pixels according to the first and second ordering attributes causes a
3 two-dimensional sort of the record-assigned pixels in each sub-group.

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1 78. (Previously Presented) The computer system of claim 56, wherein the first and second
2 ordering attributes are selected from the plurality of attributes, and wherein the method executed
3 by the processor further comprises:

4 selecting a visual indicator attribute from the plurality of attributes, wherein the visual
5 indicator attribute is different from both the first and second ordering attributes; and

6 applying colors to the record-assigned pixels according to the visual indicator attribute
7 such that at least some of the record-assigned pixels have different colors.

1 79. (Previously Presented) The computer system of claim 56, wherein the sub-groups of the
2 pixel bar chart are arranged in an array defined by the first and second axes.

1 80. (Previously Presented) The computer system of claim 79, wherein at least some of the
2 sub-groups have different widths measured in terms of pixels along the first axis, and at least
3 some of the sub-groups to have different heights measured in terms of pixels along the second
4 axis.

1 81. (Previously Presented) A method executed by a computer to form a pixel bar chart for
2 display on a display monitor, comprising:

3 receiving a set of records, each record comprising a plurality of attributes;

4 assigning the records to respective data points of the pixel bar chart; and

5 partitioning the data points into groups along a first axis of the pixel bar chart according
6 to a first dividing attribute;

7 partitioning the data points in the groups into sub-groups along a second axis of the pixel
8 bar chart according to a second dividing attribute, wherein the sub-groups are arranged in an
9 array defined by the first and second axes;

10 after partitioning into the sub-groups, sorting, in each of the sub-groups, the data points
11 according to a first ordering attribute along the first axis of the pixel bar chart, and according to a
12 second ordering attribute along the second axis of the pixel bar chart.

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1 82. (Previously Presented) The method of claim 81, wherein partitioning into the sub-groups
2 causes at least some of the sub-groups to have different widths measured in terms of pixels along
3 the first axis, and causes at least some of the sub-groups to have different heights measured in
4 terms of pixels along the second axis.

1 83. (Previously Presented) The method of claim 44, wherein the first dividing attribute,
2 second dividing attribute, first ordering attribute, and second ordering attribute are distinct
3 attributes.

1 84. (Previously Presented) The method of claim 44, wherein the first dividing attribute,
2 second dividing attribute, first ordering attribute, and second ordering attribute are selected from
3 the plurality of attributes.

1 85. (Previously Presented) The computer-readable storage medium of claim 50, wherein the
2 first dividing attribute, second dividing attribute, first ordering attribute, and second ordering
3 attribute are distinct attributes.

1 86. (Previously Presented) The computer-readable storage medium of claim 50, wherein the
2 first dividing attribute, second dividing attribute, first ordering attribute, and second ordering
3 attribute are selected from the plurality of attributes.

1 87. (Previously Presented) The computer system of claim 56, wherein the first dividing
2 attribute, second dividing attribute, first ordering attribute, and second ordering attribute are
3 distinct attributes.

1 88. (Previously Presented) The computer system of claim 56, wherein the first dividing
2 attribute, second dividing attribute, first ordering attribute, and second ordering attribute are
3 selected from the plurality of attributes.

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1 89. (Previously Presented) The method of claim 81, wherein the first dividing attribute,
2 second dividing attribute, first ordering attribute, and second ordering attribute are distinct
3 attributes.

1 90. (Previously Presented) The method of claim 81, wherein the first dividing attribute,
2 second dividing attribute, first ordering attribute, and second ordering attribute are selected from
3 the plurality of attributes.